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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,080	04/24/2001	James Johnson	47382.000123	4329

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EXAMINER	
GAGLIARDI, ALBERT J	

ART UNIT	PAPER NUMBER
2884	

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/840,080	JOHNSON ET AL.	
	Examiner	Art Unit	
	Albert J. Gagliardi	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/05, 7/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Comment on Submissions

1. This Office Action is responsive to submissions of 24 April 2001.

Information Disclosure Statement

2. Where the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action. See Guidelines for Reexamination of Cases in View of *In re Portola Packaging, Inc.*, 110 F.3d 786, 42 USPQ2d 1295 (Fed. Cir. 1997), 64 FR at 15347, 1223 Off. Gaz. Pat. Office at 125 (response to comment 6). Consideration by the examiner of the information submitted in an IDS means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 08B or its equivalent mean that the information has been considered by the examiner to the extent noted above. MPEP § 609 (Eighth Edition, August 2001).

The examiner notes that due to the unusually large number of references cited (including multiple thousands of pages), and the absence of any description of the relevance of the references, it should be assumed that only the most cursory review of the cited documents consistent with these guidelines has been performed. If applicant is aware of any information that might be of particular relevance, it should be pointed out in order to insure a higher degree consideration.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because, in Fig. 6, the term "Acceleration" is misspelled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18, the claim recites the limitation "the filter positioned in step d). There is insufficient antecedent basis for this limitation in the claim. The examiner notes that there is no recitation of a filter being positioned in step d).

The remaining claims are rejected on the basis of their dependency.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop *et al.* (US 5,210,702 A) in view of Melrose *et al.* (US 4,678,914 A).

Regarding claim 1, *Bishop* discloses (Figs. 1, 5) a gas analysis device for remotely determining at least one characteristic of a vehicle plume comprising: a radiation source (13); a plurality of filters (37) to receive radiation after the radiation has passed through a vehicle emission plume (30), each of the filters capable of filtering out radiation except for a predetermined wavelength band (col. 6, lines 37-45); and a plurality of detectors (35) positioned such that radiation from the radiation source may be directed onto the detectors via at least two of the filters to thereby produce a plurality of detector responses proportional to the intensity of the radiation directed onto the detectors via said filters (col. 6, lines 40-45; col. 7, lines 14-31).

Bishop does not disclose that the plurality of filters are movable or that the radiation from the source is sequentially directed onto one of the detectors via at least two filters.

Melrose discloses a time-multiplexed gas analysis device including a source (12); a plurality of movable filters (28); and a detector (32); wherein the radiation from the source is sequentially directed onto the detector via at least two filters to thereby produce a plurality of detector responses proportional to the intensity of radiation directed onto the detector via the at least two filters (see generally Fig. 5(a); col. 3, lines 45-59).

It is well known in the art that multi-channel signal acquisition using a plurality of detectors to generate a plurality of signals (such as disclosed by *Bishop*) and time-multiplexed signal acquisition using a single time-multiplexed detector to generate a plurality of signals (such as disclosed by *Melrose*) are functionally equivalent design choices such that substitution of one for the other would be an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the application. As such the modification of *Bishop* in view of

Melrose so as to use a plurality of movable filters and a single detector as disclosed by *Melrose* would be obvious to one skilled in the art in view of the known functional equivalence thereof.

Regarding claim 2, *Melrose* discloses that the movable filters (28) are arranged on a movable filter wheel (26).

Regarding claim 3, the use of a housing which is sealed to substantially prevent radiation from reaching the detector via one of the filters is well known in the art would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the application.

Regarding claim 4, the use of a general filter to remove substantially all visible light from a radiation beam is well known in the art of infrared gas analysis and would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the application.

Regarding claims 5 and 6, the use of either pass-through filters or reflective filters is well known in the art would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the application.

Regarding claim 7, *Bishop* discloses that the radiation source projects a beam of infrared radiation across the path of a moving vehicle (see generally Fig. 1).

Regarding claim 8, *Melrose* discloses the use of a processor (140) for processing at least one detector response.

Regarding claim 9, *Melrose* discloses that the device includes an indicator for informing the processor which filter is optically aligned with the detector for a particular detector response (col. 2, lines 15-21).

Regarding claim 10, the device of *Bishop* in view of *Melrose* suggests a method for

remotely determining the characteristic of a vehicle emission plume comprising the steps of: providing a source of radiation (Bishop, 13); directing radiation from the source through an emission plume of a moving vehicle (30) to a first filter (Melrose, 28a) and then to a detector (32); generating a first detector response indicative of the radiation received by the detector (see generally Fig. 5(a); col. 3, lines 45-59); positioning a further filter (28b) such that radiation from the source is directed through the exhaust plume of the moving vehicle to the further filter and then to the detector; generating a further detector response indicative of the radiation received by the detector via the further filter (see generally Fig. 5(a); col. 3, lines 45-59); optionally repeating the positioning a further filter (28c, 28d) and generating a further detector response steps to obtain an additional detector response for each repetition of the sequence (see generally Fig. 5(a); col. 3, lines 45-59); and determining at least one characteristic of the vehicle emission plume from the detector responses (Bishop, abstract, lines 1-3).

Regarding claims 11-17, the method according to claims 11-17 is suggested by the method of *Bishop* and *Melrose*, as applied to claim 10 above, and further in view of the device as suggested according to claims 2-9.

Regarding claim 18, as best understood, the device of *Bishop* suggests a method for remotely determining the characteristic of a vehicle emission plume comprising the steps of: providing a source of radiation (13); directing radiation from the source through an emission plume of a moving vehicle (30) to a first filter (37) and then to a detector (35); generating a first detector response indicative of the radiation received by the detector (col. 6, lines 40-45; col. 7, lines 14-31); positioning a further detector such that the radiation from the source (35) may be directed through the exhaust plume to a further filter (37) and then to the further detector; directing radiation from the source to the further filter and the further detector (see generally Fig.

5); generating a second detector response indicative of the intensity of light received by the further detector via the further filter (col. 6, lines 40-45; col. 7, lines 14-31); optionally repeating the positioning, directing and generating steps above (col. 6, lines 40-45; col. 7, lines 14-31); and determining at least one characteristic of the vehicle emission plume from the detector responses (abstract, lines 1-3).

Bishop does not disclose the use of a single detector that is positioned to receive radiation sequentially from the further filters.

Melrose discloses a time-multiplexed gas analysis device (see regarding claim 1 above) including a source (12); a plurality of filters (28); and a detector (32); wherein the radiation from the source is sequentially directed onto the detector via at least two filters to thereby produce a plurality of detector responses proportional to the intensity of radiation directed onto the detector via the at least two filters (see generally Fig. 5(a); col. 3, lines 45-59). The time-multiplexed signals produced by the *Melrose* device are the result of repositioning the filters in regard to the radiation beam and the detector. It would be obvious to one of ordinary skill in the art that the same result could be obtained by repositioning the radiation beam and the detector in regard to the filters, since it is the relative movement that allows for time multiplexing. One skilled in the art would recognize that the benefit of time multiplexing is that fewer detectors are required. As such, it would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the application to substitute a single movable detector generating a plurality of time-multiplexed signals for the plurality of detectors as disclosed by *Bishop* in order to reduce the required number of detectors.

Regarding claims 19 and 20, the method according to claims 19 and 20 is suggested by the method of *Bishop* and *Melrose*, as applied to claim 18 above, and further in view of the device as suggested according to claims 5 and 6.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert J. Gagliardi
Primary Examiner
Art Unit 2884

AJG